

(19) World Intellectual Property
Organization
International Bureau



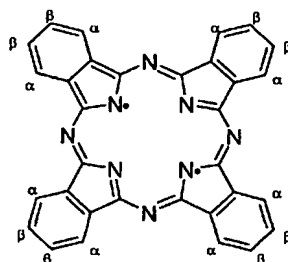
(43) International Publication Date
17 February 2005 (17.02.2005)

PCT

(10) International Publication Number
WO 2005/014732 A1

- (51) International Patent Classification⁷: **C09D 11/00**
- (21) International Application Number:
PCT/GB2004/002864
- (22) International Filing Date: 2 July 2004 (02.07.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0316856.4 18 July 2003 (18.07.2003) GB
- (71) Applicant (for all designated States except US): **AVECIA LIMITED** [GB/GB]; Hexagon House, Blackley, Manchester M9 8ZS (GB).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **PATEL, Prakash** [GB/GB]; P.O. Box 42, Hexagon House, Blackley, Manchester M9 8ZS (GB).
- (74) Agents: **MORPETH, Fraser, Forrest et al.**; AVECIA Limited, Intellectual Property Group, P.O. Box 42, Hexagon House, Blackley, Manchester M9 8ZS (GB).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **CYAN INKS AND THEIR USE IN INK-JET PRINTERS**



(2)

(57) Abstract: A composition comprising: (a) a major dye component which is a mixture of copper phthalocyanine dyes of Formula (1): $\text{CuPc}\beta\text{-(SO}_3\text{M)}_x\beta\text{-(SO}_2\text{NH}_2)_y$ Formula (1) wherein: Pc represents a phthalocyanine nucleus of Formula (2); M is a cation; x and y each independently have an average value of from 0.5 to 3.5; $(x+y) = 4$; and the sulfo and sulfonamide substituents are attached to a β -position on the phthalocyanine ring; and (b) a liquid medium which comprises water and an organic solvent or an organic solvent free from water. Also ink-jet printing processes, printed images, ink-jet printers and ink-jet cartridges.